

REMARKS

The Office Action dated May 8, 2007 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-13 are currently pending in the application and are respectfully submitted for consideration.

The Office Action rejected claims 1-3, 6, 12, and 13 under 35 U.S.C. §103(a) as being unpatentable over Langlet (U.S. Patent No. 5,930,248) in view of Lu (U.S. Patent No. 5,887,256). The Office Action took the position that Langlet discloses all of the elements of the claims, with the exception of allocating at least one of the telecommunication channels between the base station controller and the base station. The Office Action then cited Lu as allegedly curing this deficiency in Langlet. The rejection is respectfully traversed for at least the following reasons.

Claim 1, upon which claims 2 and 3 are dependent, recites a method which includes arranging, in a mobile system between a base station controller and base stations, telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station. The method further includes allocating in call set-up at least one of the telecommunication channels between the base station controller and the base stations to the base station handling the call, and controlling the base station controller to transmit information to the base station on the telecommunication channel between the base station controller and the base station allocated thereto.

Claim 12 recites a base station controller including a communicating unit configured to communicate with base stations via a plurality of optional telecommunication channels, which are not permanently allocated to any base station, between the base station controller and the base stations. The base station controller further includes a controller configured to allocate in call set-up at least one of said telecommunication channels between the base station controller and the base station to a base station for a call and to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated.

Claim 13 a mobile system comprising arranging means for arranging base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station, between a base station controller and the base stations. The mobile system also includes allocating means for allocating in call set-up at least one of said telecommunication channels between the base station controller and the base stations to the base station handling the call, and controlling means for controlling the base station controller to transmit information to the base station on the telecommunication channel between the base station controller and the base stations allocated thereto.

Embodiments of the present invention provide for an efficient utilization of telecommunication channels between the base station and the base station controller. Channel allocation may be performed call-specifically in order to improve the degree of utilization of the channels. As such, a given telecommunication channel may only be

allocated for the duration of the call to a transceiver unit of the base station handling the call. When the call terminates, the telecommunication channel may be released and it can be freely allocated to another transceiver unit. The same telecommunication channel can thus be allocated call-specifically to various base stations. Thus, a pool of unallocated telecommunication channels is formed between the base stations and the base station controller; from which pool the base station controller allocates a free channel call-specifically to the base station that needs a channel for handling a call at a given time (Specification, page 2, line 34 – page 3, line 11).

As will be discussed below, the combination of Langlet and Lu fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Langlet discloses a communication system which provides communication coverage over radio frequency channels that are subdivided into a plurality of time slots during which information are communicated with at least one mobile unit. The system includes a base station that is linked to a mobile unit via one or more of the radio frequency channels. The base station includes a plurality of space and/or polarization diversity antennas, for transmitting the information on multicast and non-multicast channels. The non-multicast channels are time slots during which the information is transmitted from only one of the antennas, and the multicast channels are the time slots during which the same information is transmitted from more than one of the antennas. A controller allocates the multicast and non-multicast channels based on a measure of the

propagation property of the radio frequency channels that link the mobile unit to the base station.

Lu discloses a method for facilitating cellular communication for a plurality of native cellular handsets in a hybrid cellular communication network which includes a cellular exchange subsystem and a private mobile-services switching center. The cellular exchange subsystem is coupled to a public cellular, and the native cellular handsets are handsets that subscribe to the hybrid cellular communication network. The hybrid cellular communication network also facilitates cellular communication between a non-native cellular handset and the public cellular network, where the non-native cellular handsets are handsets that do not subscribe to the hybrid cellular communication network. Access request data is received and a cellular exchange subsystem is used to determine whether the access request data originated from a native cellular handset or from a non-native cellular handset. If the access request data originated from a native cellular handset, then data relating to the access request is passed to the private mobile-services switching center for completing a first call path from the native cellular handset. If the access request data originated from a non-native cellular handset, then data relating to the access request data is passed to the public cellular network for completing a second call path between the non-native cellular handset and the public cellular network.

Applicants respectfully submit that the combination of Langlet and Lu fails to disclose or suggest all of the elements of the present claims. For example, the combination of Langlet and Lu fails to disclose or suggest “arranging, in a mobile system

between a base station controller and base stations, telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station,” as recited in claim 1. Similarly, Langlet and Lu do not disclose or suggest “arranging means for arranging base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station, between a base station controller and the base stations,” as recited in claim 13. The combination of Langlet and Lu also fails to disclose or suggest “a controller configured to allocate in call set-up at least one of said telecommunication channels between the base station controller and the base station to a base station for a call and to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated,” as recited in claim 12.

Accordingly, embodiments of the claimed invention are directed to a method where optional channels which are not permanently allocated to any base station are arranged specifically between a base station controller and a base station. These channels are allocated in call set-up for the base station handling the call.

Langlet does not disclose or suggest telecommunication channels, arranged between a base station controller and base stations, which are available for a plurality of base stations but not permanently allocated to any base station. Rather, Langlet merely discloses employing multicasting techniques for extending communication coverage over downlink radio frequency (RF) channels (see Langlet, Column 1, line 65- Column 2, line 10). More specifically, Langlet teaches “the BSC 16 can dynamically reallocate the

multicast and non-multicast resources based on operating requirements of the system, for example, based on fault conditions reported by the RBS 22. In addition, the BSC 16 could dynamically increase the number of time slots allocated for multicast transmission, if the propagation properties of the linking RF channels so require. For example, when a large number of mobile units 12 are positioned at the fringes of a communication cell with degraded RF links on the non-multicast channels, the BSC 16 can designate some of the non-multicast channels as multicast channels, to improve the downlink coverage” (Langlet, Column 5, line 65 – Column 6, line 7).

Applicants respectfully assert that the multicast and non-multicast channels disclosed in Langlet are not telecommunications channels arranged between a base station controller and base stations. Rather, the multicast and non-multicast channels disclosed in Langlet are RF channels between base stations and mobile stations (see Langlet, Column 3, lines 11-26). Langlet fails to disclose or suggest arranging non-permanently allocated channels between a base station controller and base stations. As such, Langlet does not disclose or suggest “arranging, in a mobile system between a base station controller and base stations, telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station,” as recited in claim 1 and similarly recited in claim 13. As a result, Langlet also fails to disclose a controller configured to allocate in call set-up at least one of said telecommunication channels between the base station controller and the base station, as recited in claim 12.

Furthermore, Lu fails to cure the deficiencies in Langlet outlined above. Lu, like Langlet, fails to disclose or suggest “arranging, in a mobile system between a base station controller and base stations, telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station,” as recited in claim 1 and similarly recited in claim 13, and also fails to disclose a controller configured to allocate in call set-up at least one of said telecommunication channels between the base station controller and the base station, as recited in claim 12.

In particular, Lu, like Langlet, fails to disclose telecommunication channels, between a base station controller and base stations, which are available for a plurality of base stations but not permanently allocated to any base station. Lu only discloses that each base station controller controls one or more base transceiver stations (Lu, Column 5, lines 40-43). Additionally, Figure 2 of Lu illustrates a line 174 which connects the base station controller to the base transceiver station. However, line 174 is never mentioned in the specification of Lu and no explanation is provided of its function. Therefore, Lu fails to disclose or suggest the telecommunication channels of the present claims.

For at least the reasons discussed above, Applicants respectfully submit that the combination of Langlet and Lu fails to disclose or suggest “arranging, in a mobile system between a base station controller and base stations, telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station,” as recited in claim 1 and similarly recited in claim 13. The combination of Langlet and Lu also fails to disclose or suggest “a controller configured to allocate in call

set-up at least one of said telecommunication channels between the base station controller and the base station to a base station for a call and to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated,” as recited in claim 12.

Claims 2 and 3 are dependent upon claim 1. Thus, claims 2 and 3 should be allowed for at least their dependence upon claim 1, and for the specific limitations recited therein.

Claims 4 and 7-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Langlet in view of Lu and Kanai (U.S. Patent No. 6,195,566). The Office Action took the position that Langlet discloses all of the elements of the claims, with the exception of: a switching unit configured to switch the base station transceiver units onto a particular channel of said plurality of optional telecommunication channels between the base station controller and the base stations, and which transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated, and the switching unit of the first, and correspondingly, of the second base station are responsive to said message for switching the base station transceiver units to the telecommunication channel assigned by said message. The Office Action then cited Lu and Kanai as allegedly curing these deficiencies in Langlet. The rejection is respectfully traversed for the following reasons.

Claim 4, upon which claims 5-8 are dependent, recites a mobile system including a base station controller, a plurality of optional telecommunication channels which are

not permanently allocated to any base station and are available between the base station controller and base stations, and at least a first and a second base station. The base stations comprise transceiver units configured to establish a telecommunication connection by radio signals to the subscriber terminals located in the base station coverage area and a switching unit configured to switch the base station transceiver units onto a particular channel of the plurality of optional telecommunication channels between the base station controller and the base stations. The base station controller comprises a controller which, in call set-up, allocates at least one of the telecommunication channels between the base station controller and the base stations to the first or the second base station for the call and which transmit a predetermined message indicating the allocated telecommunication channel to the base station to which the channel is allocated. The switching unit of the first, and correspondingly, of the second base station are responsive to the message for switching the base station transceiver units to the telecommunication channel assigned by the message.

Claim 9, upon which claim 10 is dependent, recites a base station, which includes transceiver units configured to establish a telecommunication connection by radio signals to the subscriber terminals located in the coverage area of the base station. The base station further includes a switching unit configured to connect its transceiver units in call set-up to a base station controller via particular channels of a plurality of optional telecommunication channels, available between the base station controller and base stations of the system, which are not permanently allocated to any base station. The

switching unit is responsive to a message received by the base station in conjunction with the call set-up for switching a particular transceiver unit onto the telecommunication channel between the base station controller and the base station indicated by the message for the call.

Claim 11 recites a base station controller. The base station controller includes means for communicating with base stations via a plurality of optional telecommunication channels, which are not permanently allocated to any base station, between the base station controller and the base stations. The base station controller also includes control means which are arranged to allocate, in call set-up, at least one of the telecommunication channels between the base station controller and the base stations to a base station for a call and which are arranged to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated.

As will be discussed below, Langlet, Lu and Kanai, whether viewed individually or combined, fail to disclose or suggest all of the elements of the claims, and therefore fail to provide the features discussed above.

Langlet and Lu are discussed above. Kanai discloses a cellular radio communication system utilizing integrated base stations. The system includes a cell containing a first base station with conventional transceivers and base station facilities, and the antenna of a second base station facility. The first base station facility is made up of a group of base stations facilities where the equipment is integrated, while the second

base station is a conventional local base station. A transceiver may have unused capacity and a caller with a low priority may not be assigned to the transceiver even though capacity is available. Instead, the capacity is kept available for a caller with a higher priority. Traffic monitors are used by portable telephone providers to manage the traffic in every cell, and traffic can be assigned to the transceiver based on the provider with the highest volume or according to a prearranged priority scale.

Applicants respectfully submit that the combination of Langlet and Kanai fails to disclose or suggest all of the elements of claims 4, 9 and 11. For instance, Langlet and Kanai fail to disclose or suggest switching the base station transceiver units onto a particular channel of the plurality of optional telecommunication channels between the base station controller and the base stations, as recited in claim 4 and similarly recited in claim 9.

The Office Action acknowledged that Langlet fails to disclose or suggest the claimed switching of the base station transceiver units onto a particular channel of the plurality of optional telecommunication channels between the base station controller and the base stations. However, the Office Action cited Kanai as allegedly disclosing this element of the claims (Office Action, pages 6-7) . Applicants respectfully disagree. The switch 105 of Kanai is located on the antenna 112 side of the transceiver units 104 and therefore cannot be used to connect a transceiver unit 104₁-104₄ to a selected channel on the communication path between the base station and the base station controller (Kanai, Figure 1). Therefore, the switch 105 of Kanai does not make it possible to switch the

transceiver units 104₁-104₄ to a particular channel of a plurality of optional channels between the base station controller and base stations.

Accordingly, Kanai, like Langlet does not disclose or suggest switching a particular transceiver unit onto the telecommunication channel between the base station controller and the base station. Lu also fails to cure these deficiencies in Langlet and Kanai. Thus, Langlet, Lu and Kanai, whether considered individually or combined, fail to disclose or suggest switching the base station transceiver units onto a particular channel of the plurality of optional telecommunication channels between the base station controller and the base stations, as recited in claim 4 and similarly recited in claim 9.

Claims 5-8 and 10 are dependent upon claims 4 and 9, respectively. Consequently, claims 5-8 and 10 should be allowed for at least their dependence upon claims 4 and 9, and for the specific limitations recited therein.

Furthermore, the combination of Langlet, Lu and Kanai fails to disclose or suggest “control means which are arranged to allocate in call set-up at least one of said telecommunication channels between the base station controller and the base stations to a base station for a call and which are arranged to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated,” as recited in claim 11. The Office Action acknowledged that Langlet fails to disclose this element of claim 11. However, the Office Action cited Kanai as allegedly curing this deficiency in Langlet. Applicants respectfully disagree.

In fact, the Office Action does not appear to cite any specific element of Kanai as corresponding to the control means of the claimed invention. Rather, the Office Action stated that “those skilled in the art will appreciate that Kanai could be modified such that the station controller (see fig. 1, BSC 102) comprises control means (see fig. 1, Controller 130) without deviating from the scope and spirit of Kanai’s invention” (Office Action, page 6). The Office Action does not provide any motivation or suggestion for modifying the station controller of Kanai to include the control means of the present invention. Applicants respectfully assert that there would not be any motivation for a person of skill in the art to modify the station controller of Kanai to transmit the claimed message to the base station, as the base station of Kanai does not include any switching means which would make it possible for the base station to switch to such a channel between the base station controller and the base station as indicated in the message. Lu also fails to cure these deficiencies in Langlet and Kanai.

Therefore, Applicants respectfully submit that the Office Action has failed to establish a prima facie case for obviousness, as the combination of Langlet, Lu and Kanai fails to disclose or suggest all of the elements of claim 11. As such, Applicants respectfully request that the rejection of claim 11 be withdrawn.

Claim 5 was rejected under 35 U.S.C. §103(a) as being anticipated by Langlet in view of Kanai and Lu, and further in view of Tiedemann (U.S. Patent No. 5,987,326) and Choi (U.S. Patent No. 6,724,740). The rejection is respectfully traversed for the following reasons.

Langlet, Lu and Kanai are discussed above. Tiedemann discloses a method and apparatus for controlling handoff in a communication system. The communication system provides for independent handoff of the fundamental code channel and supplemental code channels on the forward link. When the supplemental code channel is not in handoff, the supplemental code channels are only transmitted by the base station with the strongest pilot received at the subscriber unit. The Extended Handoff Direction Message, which directs the subscriber unit to the base stations currently transmitting data to it, separately specifies the base stations transmitting the fundamental code channel and supplemental code channels.

Choi discloses a CDMA communication system for transmitting/receiving control information during a voice or data communication service by using a dedicated control channel. The system includes a base station device and a terminal device. The base station device has a forward pilot channel generator for generating a pilot signal, a forward dedicated control channel generator for generating a control message for a forward dedicated control channel, a forward fundamental channel generator for generating a voice signal, and a forward supplemental channel generator for generating packet data. The terminal device includes a reverse dedicated control channel generator for generating a control message for a reverse dedicated control channel, a reverse pilot channel generator for generating a pilot signal by adding a power control signal to the pilot signal, a reverse fundamental channel generator for generating a voice signal, and a reverse supplemental channel generator for generating packet data.

Claim 5 is dependent upon claim 4. As discussed above, Langlet, Lu and Kanai fail to disclose or suggest all of the limitations of claim 4. Furthermore, Tiedemann and Choi fail to cure the deficiencies in Lu and Kanai with respect to claim 4. Thus, the combination of Langlet, Kanai, Tiedemann, and Choi fails to disclose or suggest all of the elements of claim 5. Additionally, claim 5 should be allowed for at least its dependence upon claim 4 and for the specific limitations recited therein.

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-13 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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